BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

Figure 1

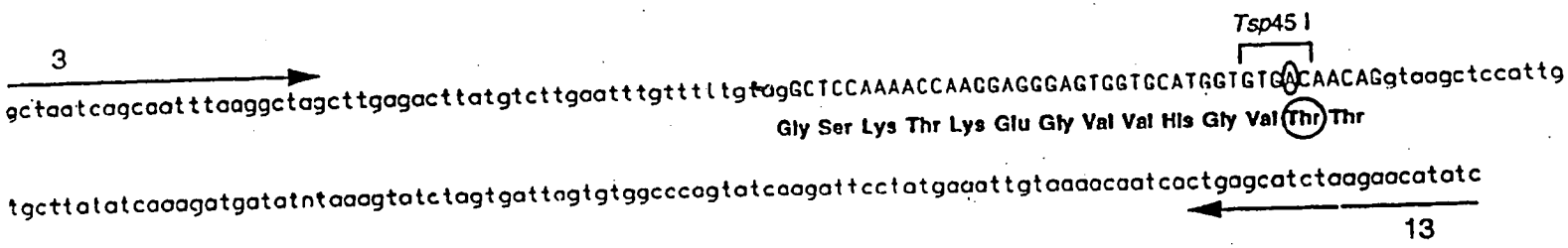


Figure 2

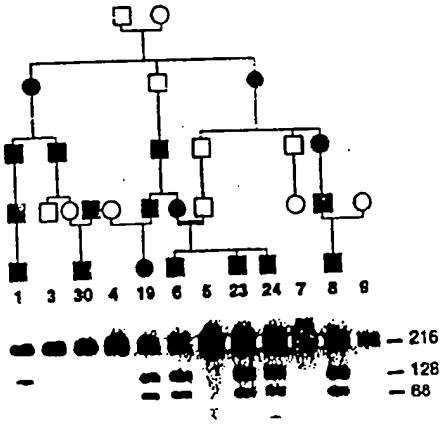


Figure 3

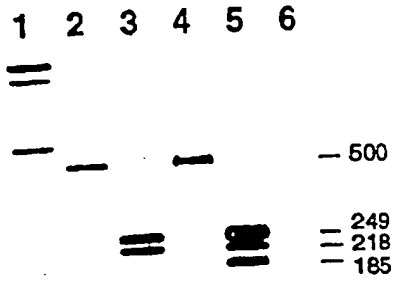
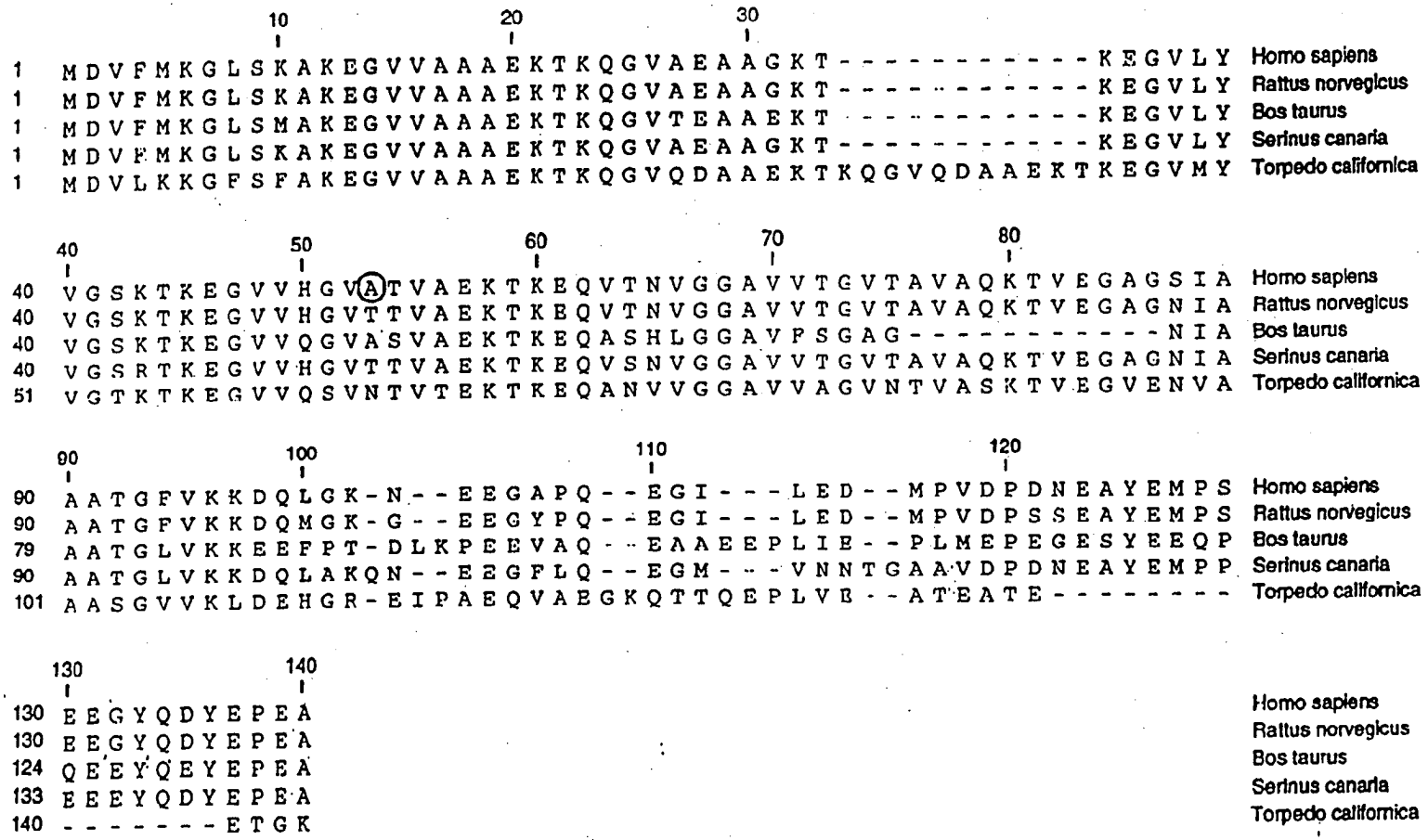


Figure 4



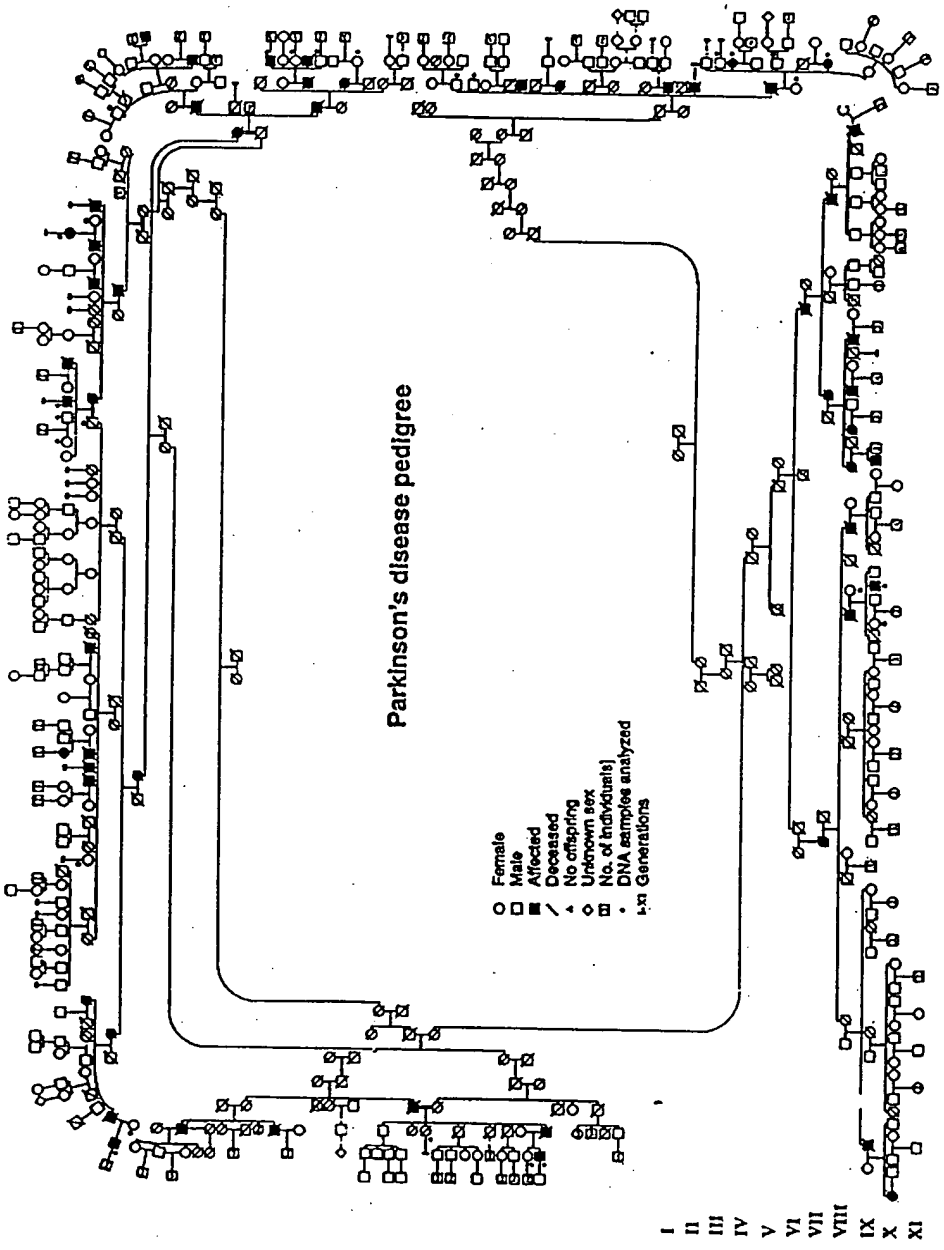

Parkinson's disease pedigree
Female
Male
Affected
Deceased
No offspring
Unknown sex
No. of individuals
DNA samples analyzed
Generations
I
II
III
IV
V
VI
VII
VIII
IX
X
XI

Figure 5

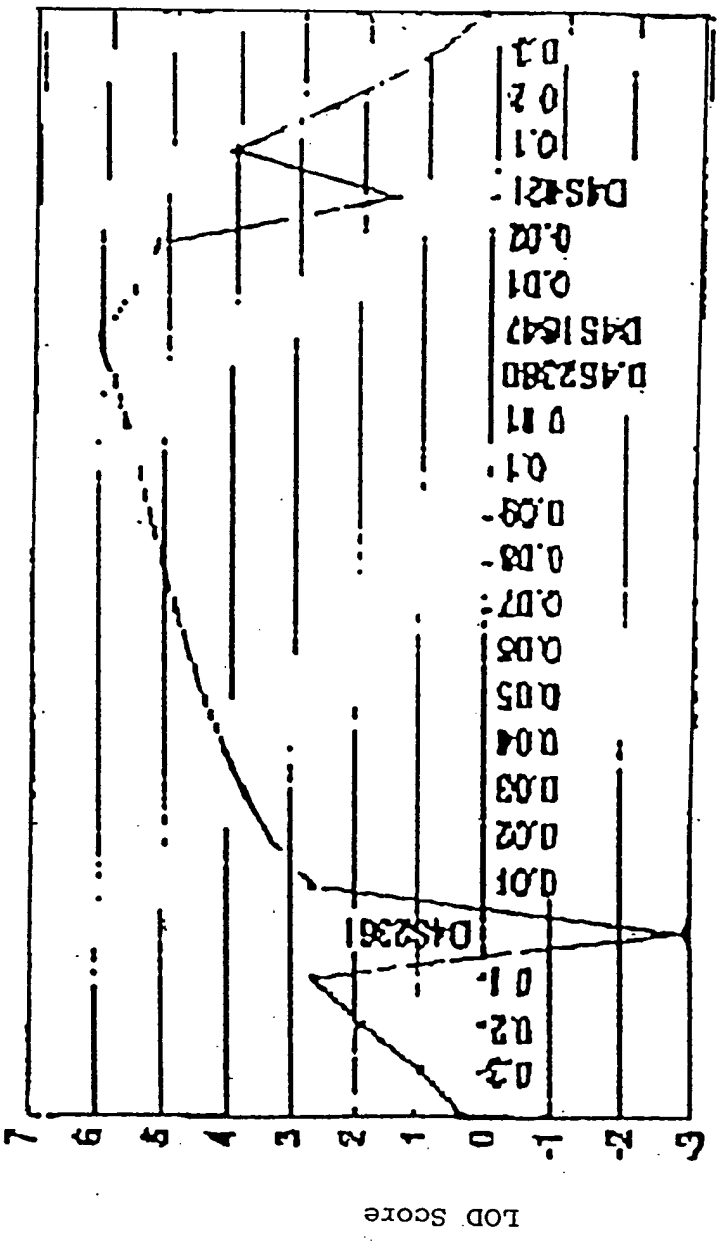

LOD Score
7
6
5
4
3
2
1
0
-1
-2
-3
0.3
0.2
0.1
0
D4S2361
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.1
0.11
D4S2380
D4S1647
0.01
0.02
D4S421
0.1
0.2
0.3

Figure 6

Figure 7

clone	5'	3'	gene
109979	T84229	T88834	alpha
111088	T83410		alpha
111090	T83411	T81593	alpha
130048	R11619	(R19409)	alpha
135534	R31354	R32856	alpha
141246	R66863	R67383	alpha
145594	R78091	R77746	alpha
171906	H19290	H19291	beta
172284	H19556	H19474	beta
172749		H19685	beta
176546		H41126	beta
193174	H47503	H47504	alpha
210768	H66914	H66869	alpha
213616	H70324	H70325	alpha
236027	H62070		alpha
248153	N53829	N73325	alpha
24991	(T80528)	R39000	alpha
26298	R13508	(R20629)	alpha
265817	N28661	N21457	alpha
266628		N22757	alpha
27342		R37173	alpha
280344	(N50305)	N47094	alpha
290894		N72005	alpha
294142		N68597	alpha
307787	W21278		alpha
340635	W56712	W56757	alpha
340683	W55986	W56276	alpha
346647	W94390	W74638	alpha
346796	W79585	W79784	alpha
359349	AA010546	AA010547	alpha
364632	AA022809	AA022690	alpha
39915		R50455	beta
40764	R56327	R56245	alpha
45086	H08908	H08824	alpha
46607	H10267	H10213	alpha
49811	H29080	H28976	alpha
50202		H17962	beta
50470		H16811	beta
66473	R16018	R16119	alpha
667794	AA258686	AA258608	alpha
69907	T48654	T48655	alpha
72391	AA394097	AA293803	gamma
739009	AA421586		beta
739014	(AA42185)	AA421567	beta
771303		AA443638	gamma
2-4		L36675	alpha
2-5		L36674	alpha
c-01f06		F01363	alpha
c-1rb08	F03254	F06981	alpha
c-2td12	F08836	F11169	alpha
c-28f08	F03751	F07521	alpha
cDNA	S69965		beta
EST01420 (HRBAA27)	M78265		gamma
EST19193	AA317129		beta
EST22040	AA319774		alpha

Figure 7 cont.

EST26845	T28079		beta
EST31489	AA328063		alpha
EST68G11	W22518		gamma
F1-625D	R29481		alpha
GEN-129D09	D81090		beta
hbc590	T11070		alpha
HIBBA65	T08213	T08212	alpha
	HR70E3R	HR70E3F	alpha
HSNACP0		U46896-46901	alpha
KK1311	N83633		alpha
		D318839	alpha
		L08850	alpha
	T28735		alpha
	Z20502		alpha

Figure 8


10 20 30 40 50 60 70
CCGCCGCAGCCGCCGCTCCATCCCCAGCCCCGGCCCCGCATCCGGTTTGGAAGGGGGCTGCAAGTTTGCA 70
AGGGGCCCGGGAXAAAAAXCGAGCAGTGGCCCTTCCCGCGTCCCCAGGGTTTCAAGGGACGCTAGGAXTX 140
TCCGCGGCCCTGGAGGTTCGCACTGGGGAGTGGGGTGAGATGGGGGGAAAGCGGGAGGGGGCTCAGGGTC 210
CAGAAGGGCXCCGCGGTCTCGGGAGTAGGGGGGCATXTGCGTCCCGCGGGAGGGGCTGGGGTGAGAGTGC 280
GGGGCCAGTGCACCGGTGCCCGTGTATCGCCCTCCCCAGGCCGCCAGGATGGACGTGTTCATGAAGGGCC 350
360 370 380 390 400 410 420
TGTCCATGGCCAAGGAGGGCGTTGTGGCAGCCGCGGAGAAAACCAAGCAGGGGGTCACCGAGGCGGCGGA 420
GAAGACCAAGGAGGGCGTCCTCTACGTCGGTGGGCXGGGGGCXGGGTTTCTGGGGCTGCAGGGCTGGGGG 490
TCCCCCTACAGTGTGGAGCTGGGGCCGGGTCCCGGGGAGGGGGGTTCTGGGCAAGATAATATXAXTCAGC 560
AGATGGGGCXAGGTCAXCAXGGGTCATAAGGGACATACCCAXCCCATAGAAXCCTGGGTCTGTATCCGGA 630
AATGGGGACACGGGGCGGGCTGATGAGGTGGGGGGCTCCAXCTGAAAGGCCAGGGACCAXTGCAXTXATA 700
710 720 730 740 750 760 770
AAAXCACACAXCCTCCTTTTTCTTATCTTTTTTACCATTATTAATAGTTATCTGGTGTTGAACACTTTCT 770
GTATGCCAAGTACTGGGTAAAATGTCATAACATCCATTTCCTCATGTAATGCTTCCGCCCATTCTACAGG 840
TAAGGGAAACTGGGCTTCCCATTGGTAGXTAAATTTTAGGTTCAGAAAGGCTTGAATTGAATGTCAGTTC 910
AGCCAATTTCTTAGTGGTGGAACCAAACTGAGTTCCATCCGTGAAACGGGGACAATAACAGCACCCGCTT 980
CCCAGGGCTGGGGAAAAGTGAAGTGCAGCGGGGCAGGCAGAGGACTTGACACAGCACTGGCCCTCAGCCA 1050
1060 1070 1080 1090 1100 1110 1120
ACATCCACTAGAGGGGTGGGGTATCGCATCAGGTGGGAGAGAACTGCAACCCTTGCAGACAGAGGTGTGG 1120
GGCCCAGTGCAGTGATAAGACGGGGGTTAACATGGGGGTGCAGGTTGTAGGATXTGGGGACCCAAGGAGG 1190
CAGTGACGGGGCCAGGATGCCCACTCTGTAATCACCATGCTGTGCTGGAGTTTCTGTTCCCTCAGCGCAG 1260
AGTCCTTAAATGTGCCGCTTTTTCTXCCCTGCAGGAAGCAAGACCCGAGAAGGTGTGGTACAAGGTGTGG 1330
CTTCAGGTACTAGCCCAGCCCTGGCACCAGCCCTTCTCTCAHTTAGGCGGATGATCTGGCCGGGAACCAG 1400
1410 1420 1430 1440 1450 1460 1470
AGGGCGGGGGCGGGGGAGACTCCCAAGGCTTCTGCGGGAATGCTCCGTGGGGAGGGCAGGCCCTGGGATA 1470
CTACAAGGCAGGGCATCGGTGTTTCCCCCTGGCTCCCAAACCCCTTCCTCAACCCCCTCCCTGCTCCAGT 1540
GGCTGAAAAAACCAAGGAACAGGCCTCACATCTGGGAGGAGCTGTGTTCTCTGGGGCAGGGAACATCGCA 1610
GCAGCCACAGGACTGGTGAAGAGGGAGGAATTCCCTACTGATCTGAAGGTAAGCGATCCTTCTGACCCGC 1680
ACATGCAGGCAAACACACACACACACACACACACACACCXGGCACACAAATAAACCTGTCACCATCCCCG 1750
1760 1770 1780 1790 1800 1810 1820
CCCCCCTAATCCTGCCACCAGCTTGGAACACAAGCCACTTTGCCTCCCATCCTGCXGGCCCGTGCTAGAC 1820
TCAGCTCAGAATGCATCTGAATAAXGGCGTGCATGGGTGTGACGCTCCCGGTGATGGGGACCCAGACCTG 1890
GCTGTCTGCGTGTATCCTGCTTGCCAGCGTGACCCATATGACTTCTGGCCACGTCTGCATGTGTCAATGA 1960
TTGTTCATTCATTTCTTTTCATTCAACAAATATCCATGCCAXAXCCAGCCCTGTCCTTGAGCTTCCAGXT 2030
CCCTTTCAGCCXAGGGGAGCXTGAGGGTTATTTTTGGGGTCCCGATGCCCAGCACAGAGCCTGACACAAA 2100
2110 2120 2130 2140 2150 2160 2170
GGATGAGGCATAAGCTGGTGAXTGAGTATCCAAATGGTGGAAGTGTGGAGGXTGCCAGGCATTGGGGGAG 2170
CGGCGTGGAGAGCCAGCTCCCCAATCCATGCTGCCACTTCAACTGTGATTCGGGGGAATTTCCCCCTTCA 2240
CCTCCATCCCACTTCCAAGGCACTCCAAATAAATAACTGAATTAGAAATTATCCTTGTTTTGCCAACCCA 2310
CCCTAGCCTTCCCCACTCCAACCCACCCAAAGCTTACCACTGTGGGAATTTGGGGGGCATCCTGGCTGTC 2380
CTCACGAGTCCTGACCTTTTCTGCCCACAGCCAGAGGAAGTGGCCCAGGAAGCTGCTGAAGAACCACTGA 2450
2460 2470 2480 2490 2500 2510 2520
TTGAGCCCCTGATGGAGCCAGAAGGGGAGAGTTATGAGGACCCACCCCAGGAGGAATATCAGGAGTATGA 2520
GCCAGAGGCGTAGGGGCCCAGGAGAGCCCCCACCAGCAGCACAATTCTGTCCCTGTCCCTGCCCCGCCCC 2590
CCAGAGCCAGGGCTGTCCTTAGACTCCTTCTCCCCAATCACGAGATCTTCCTTCCGCTCTGAGGCAACCC 2660
CCTCGGAGCCTGTGTTAGTGTCTGTCCATCTGTCTGTCCTACCCGCCCGCGTCCAACCCCGGGGCATGGA 2730
CAGGGCCAGGGTTGCGGTCGCGGCTGGGAGCCTCGCCCCTCCAGTGTTGCCTCCTCCCATCCAGCGTCTG 2800
2810 2820 2830 2840 2850 2860 2870
CGCG 2804

Figure 9

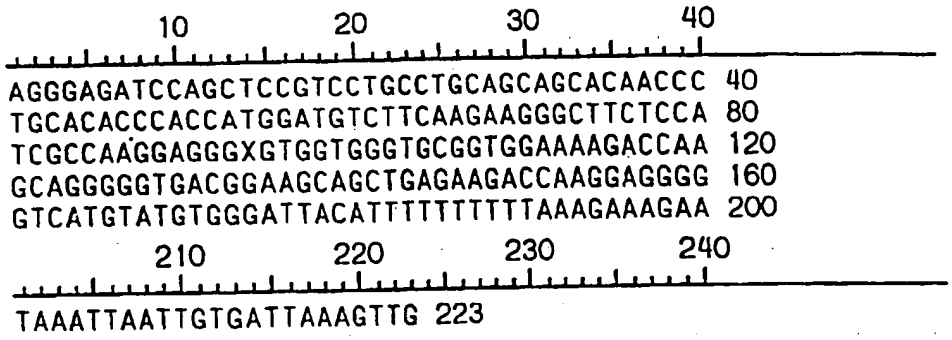


Figure 10

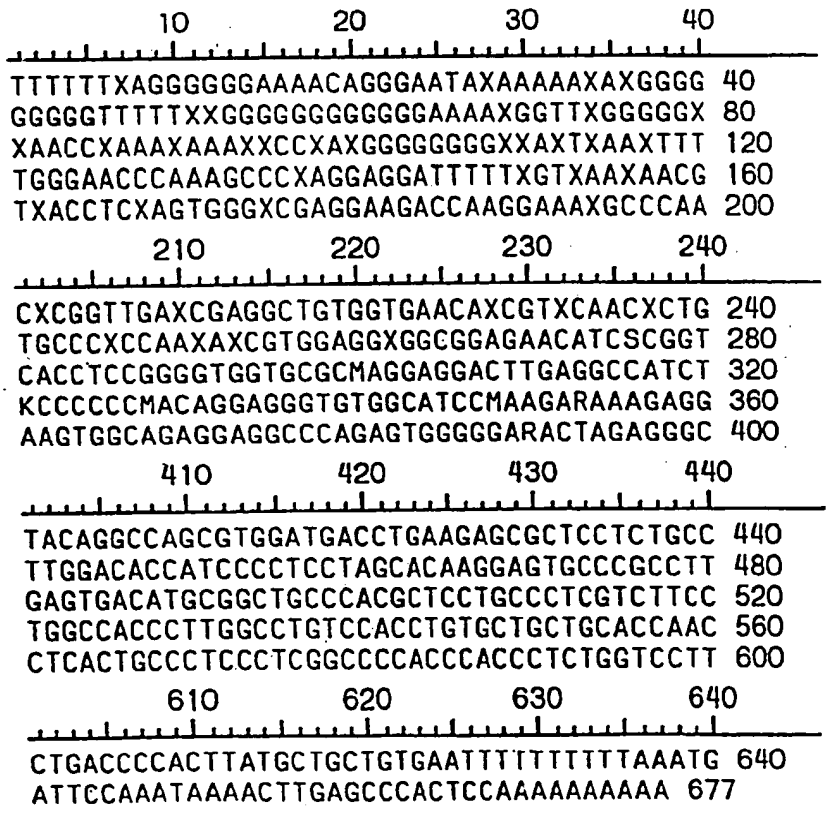


Figure 11

alpha-SYN exons 1-2

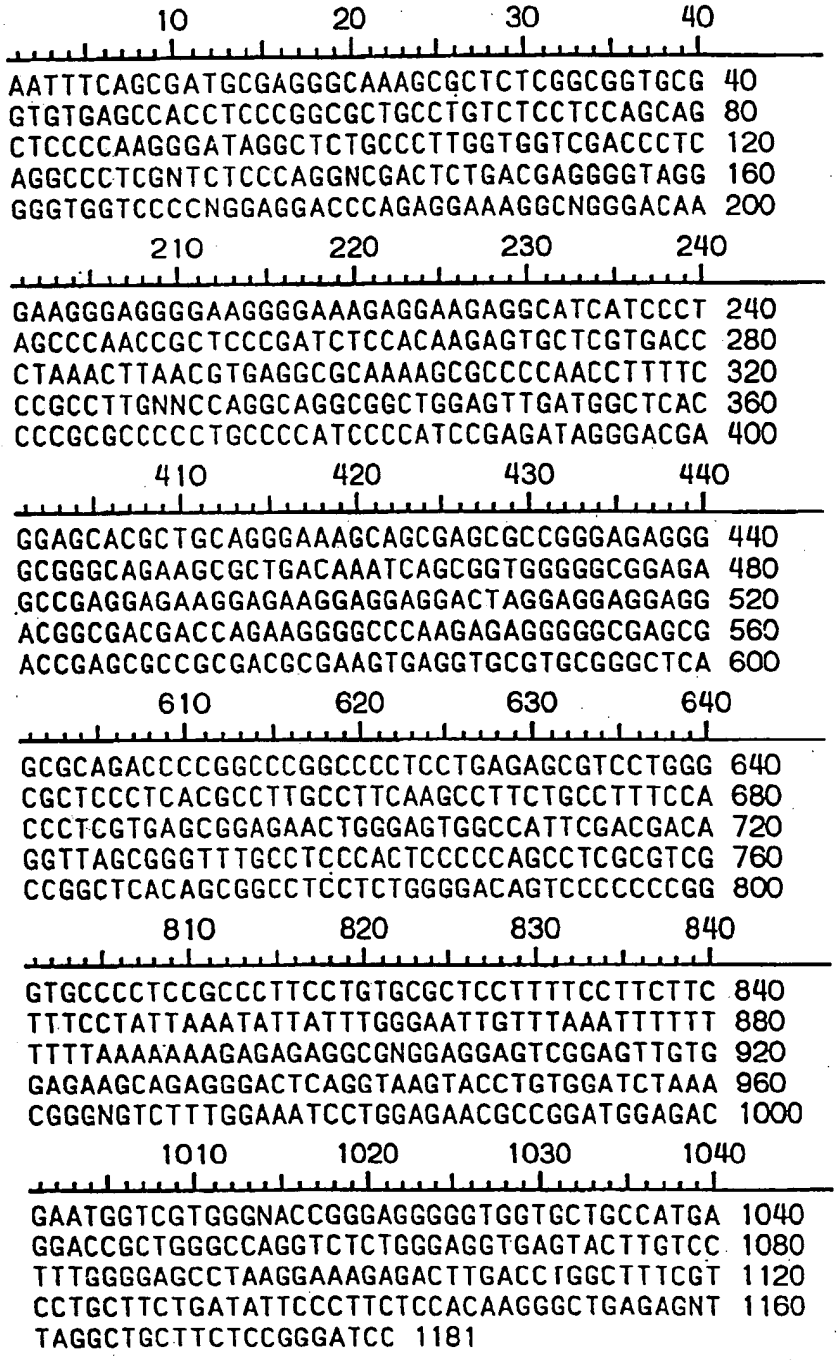


Figure 11 cont.

alpha-SYN exon 3

```
        10         20         30         40
CTTAAAAGAGTCTCACACTTTGGAGGGTTTCTCATGATTT 40
TTCAGTGTTTTTTGTTTATTTTTCCCCGAAAGTTCTCATT 80
CAAAGTGTATTTTATGTTTTCCAGTGTGGTGTAAAGAAAT 120
TCATTAGCCATGGATGTATTCATGAAAGGACTTTCAAAGG 160
CCAAGGAGGGAGTTGTGGCTGCTGCTGAGAAAACCAAACA 200
        210        220        230        240
GGGTGTGGCAGAAGCAGCAGGAAAGACAAAAGAGGGTGTT 240
CTCTATGTAGGTAGGTAAACCCCAAATGTCAGTTTGGTGC 280
TTGTTCATGAGTGATGGGTTAGGATAACAATACTCTAAAT 320
GCTGGTAGTTCTCTCTCTTGATTCATTTTTGCATCATTGC 360
TTGTCAAAAAGGTGGACTGAGTCAGAGGTATGTGTAGGTA 400
        410        420        430        440
GGTGAATGTGAACGTGTGTATNTGAGCTAATAGTAAAAAT 440
GCGACTGTTTGCTTTTCAGATTTTTAATTTTGCCTAATAT 480
NTATGACTTNTTAAAATGAATGTTTCTGTACTACATAATT 520
CTATNTCAGAGACAGT 536
```

Figure 11 cont.

alpha-SYN exon 4

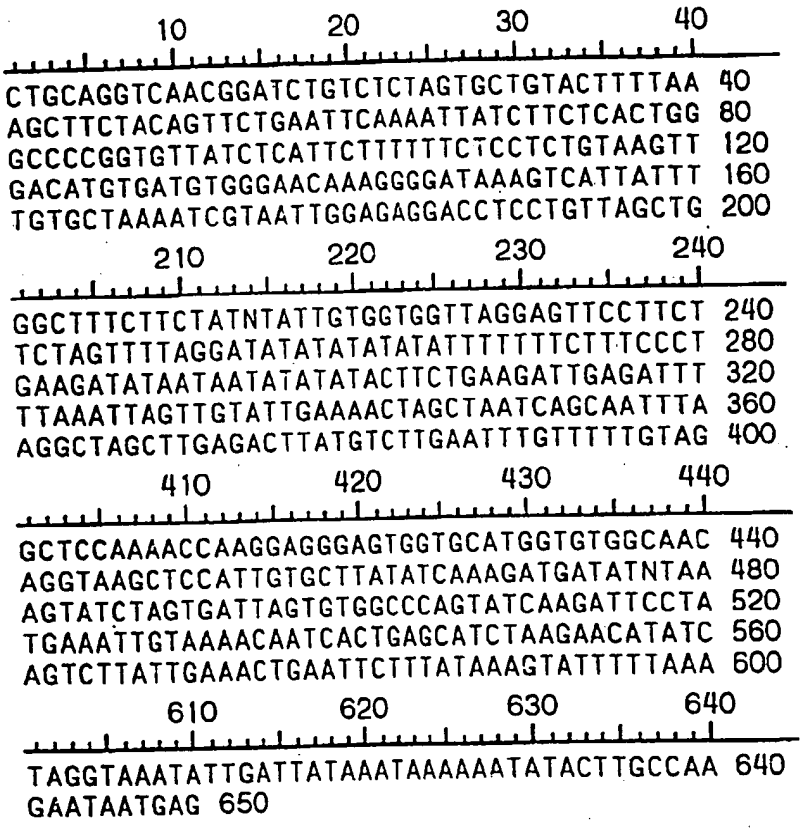


Figure 11 cont.

alpha-SYN exon 5

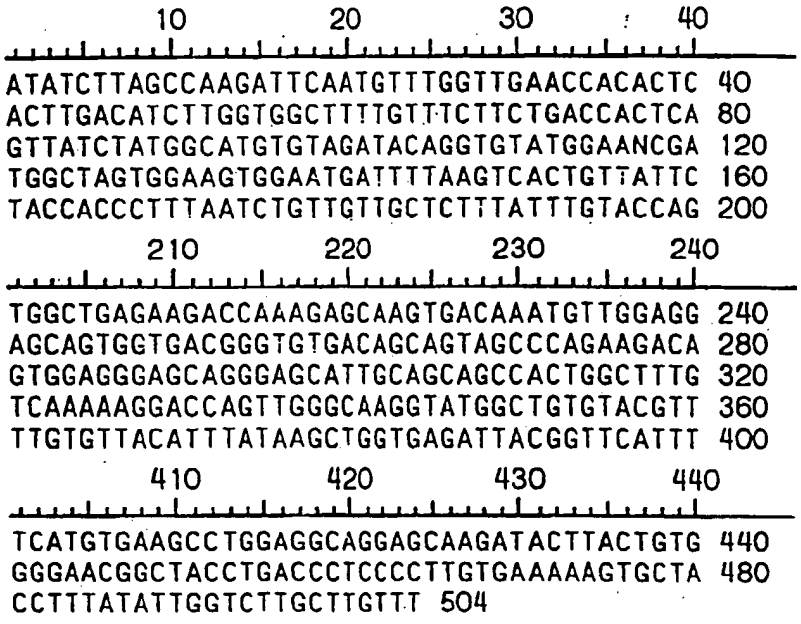


Figure 11 cont.

alpha-SYN exon 6

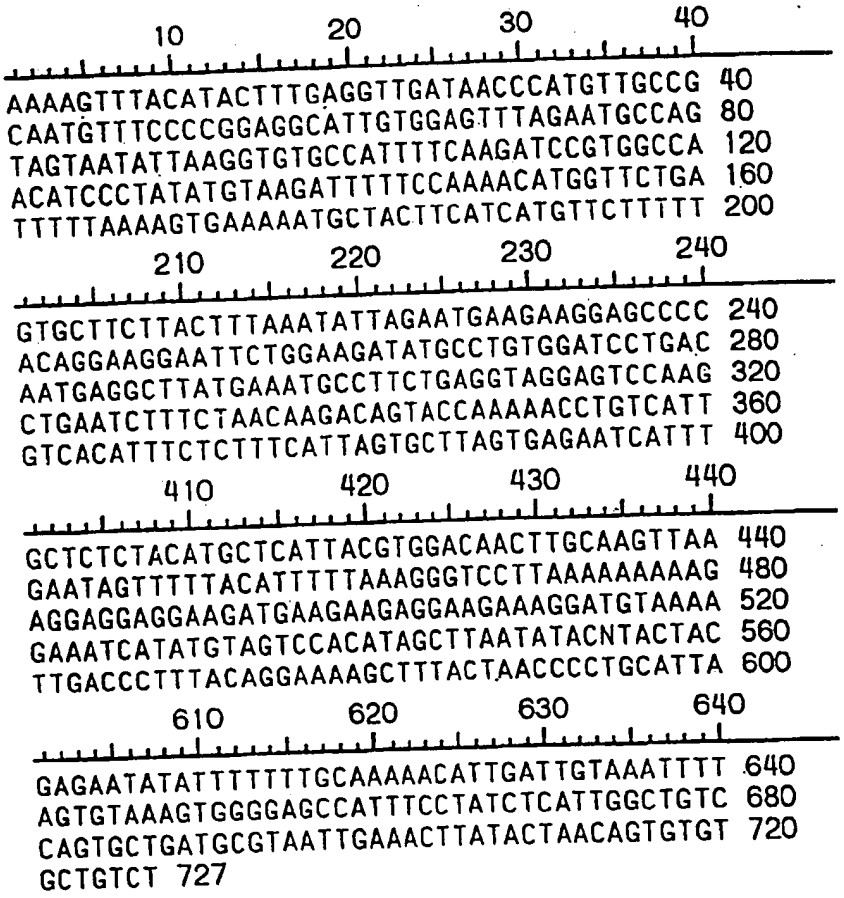


Figure 11 cont.

alpha-SYN exon 7

```
        10         20         30         40
TTTTGATTTTTCTAATATTAGGAAGGGTATCAAGACTACG 40
AACCTGAAGCCTAAGAAATATCTTTGCTCCCAGTTTCTTG 80
AGATCTGCTGACAGATGTTCCATCCTGTACAAGTGCTCAG 120
TTCCAATGTGCCCAGTCATGACATTTCTCAAAGTTTTTAC 160
AGTGTATCTCGAAGTCTTCCATCAGCAGTGATTGAAGCAT 200
       210        220        230        240
CTGTACCTGCCCCCACTCAGCATTTCGGTGCTTCCCTTTC 240
ACTGAAGTGAATACATGGTAGCAGGGTCTTTGTGTGCTGT 280
GGATTTTGTGGCTTCAATCTACGATGTTAAAACAAATTAA 320
AAACACCTAAGTGACTACCACTTATTTCTAAATCCTCACT 360
ATTTTTTTGTTGCTGTTGTTCAGAAGTTGTTAGTGATTTG 400
       410        420        430        440
CTATCATATATTATNAGATTTTTAGGTGTCTTTTAATGAT 440
ACTGTCTAAGAATAATGACGTATTGTGAAATTTGTTAATA 480
TATATNATACTTAAAAATATGTGAGCATGAAACTATGCAC 520
CTATAATACTAAATATGAAATTTTACCATTTTGCGATGTG 560
TTTTATTCACTTGTGTTTGTATATNAATGGTGAGAATTAA 600
       610        620        630        640
AATAAAACGTTATCTCATTGCAAAAATATTTTATTTTTAT 640
CCCATCTCACTTTAATAATAAAAATCATGCTTATAAGCAA 680
CATGAATTAAGAACTGACACAAAGGACAAAAATATAAAGT 720
TATTAATAGCCATTTGAAGAAGGAGGAATTTTAGAAGAGG 760
TAGAGAAAATGGAACATTAACCCTACACTCGGAATTCCCT 800
       810        820        830        840
GAAGCAACACTGCCAGAAGTGTGTTTTGGTATGCACTGGT 840
TCCTTAAGTGGCTGTGATTAATTATTGAAAGTGGGGTGTT 880
GAAGACCCCAACTACTATTGTAGAGTGGTCTATTTCTCCC 920
TTCAATCCTGTCAATGTTTGCTTTACGTATTTTGGGGAAC 960
TGTTGTTTGATGTGTATGTGTTTATAATTGTTATACATTT 1000
      1010       1020       1030       1040
TTAATTGAGCCTTTTATTAACATATATTGTTATTTTTGTC 1040
TCGAAATAATTTTTTAGTTAAAATCTATTTTGTCTGATAT 1080
TGGTGTGAATGCTGTACCTTTCTGACAATAAATAATATNC 1120
GACCATGAATAAAAAAAAAAAAAAGTGGGTTCCCGGGAA 1160
CTAAGCAGTGTAGAAGATGATTTTGACTACACCCTCCTTA 1200
```

Figure 11 cont.

alpha-SYN exon 7